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Electronic Signatures and Infrastructures (ESI) - Certificate Profiles - Part 1: Overview and common data structures

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**Electronic Signatures and Infrastructures (ESI);
Certificate Profiles;
Part 1: Overview and common data structures**

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Contents

Intellectual Property Rights	4
Foreword.....	4
Modal verbs terminology.....	5
Introduction	5
1 Scope	6
2 References	6
2.1 Normative references	6
2.2 Informative references.....	6
3 Definition of terms, symbols and abbreviations.....	7
3.1 Terms.....	7
3.2 Symbols.....	7
3.3 Abbreviations	8
4 ETSI EN 319 412 certificate profiles	8
4.1 General approach.....	8
4.2 Overview of other parts of ETSI EN 319 412	8
4.2.1 ETSI EN 319 412-2	8
4.2.2 ETSI EN 319 412-3	8
4.2.3 ETSI EN 319 412-4	9
4.2.4 ETSI EN 319 412-5	9
5 Common data structures.....	9
5.1 Semantics identifiers	9
5.1.1 General.....	9
5.1.2 ASN.1 module	10
5.1.3 Natural person semantics identifier	10
5.1.4 Legal person semantics identifier	11
5.1.5 eIDAS Natural person semantics identifier	12
5.1.6 eIDAS Legal person semantics identifier	12
5.2 Certificate Extensions regarding Validity Assured Certificate.....	12
5.2.1 Validity Assured General.....	12
5.2.2 Validity Assured - Short Term.....	13
5.2.3 ASN.1 Module.....	13
Annex A (informative): Change History	14
History	15

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Foreword

SIST EN 319 412-1 V1.4.4:2021

This European Standard (EN) has been produced by ETSI Technical Committee Electronic Signatures and Infrastructures (ESI).

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The present document is part 1 of a multi-part deliverable covering the Certificate Profiles, as identified below:

- Part 1: "Overview and common data structures";**
- Part 2: "Certificate profile for certificates issued to natural persons";
- Part 3: "Certificate profile for certificates issued to legal persons";
- Part 4: "Certificate profile for web site certificates";
- Part 5: "QCStatements".

The present document was previously published as ETSI TS 119 412-1 [i.14].

National transposition dates

Date of adoption of this EN:	24 May 2021
Date of latest announcement of this EN (doa):	31 August 2021
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	28 February 2022
Date of withdrawal of any conflicting National Standard (dow):	28 February 2022

Modal verbs terminology

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Introduction

ITU and ISO issued standards for certification of public keys in Recommendation ITU X.509 | ISO/IEC 9594-8 [i.3] which are used for the security of communications and data for a wide range of electronic applications.

Regulation (EU) No 910/2014 [i.9] of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC defines requirements on specific types of certificates named "qualified certificates". Implementation of Directive 1999/93/EC [i.1], superseded by the Regulation (EU) No 910/2014 [i.9], and deployment of certificate infrastructures throughout Europe as well as in countries outside of Europe, have resulted in a variety of certificate implementations for use in public and closed environments, where some are declared as qualified certificates while others are not.

Applications need support from standardized and interoperable identity certificate profiles, in particular when applications are used for electronic signatures, authentication and secure electronic exchange in open environments and international trust scenarios, but also when certificates are used in local application contexts.

This multi-part deliverable aims to maximize the interoperability of systems issuing and using certificates both in the European context under the Regulation (EU) No 910/2014 [i.9] and in the wider international environment.

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1 Scope

The present document provides an overview of the Recommendation ITU-T X.509 | ISO/IEC 9594-8 [i.3] based certificate profiles and the statements for EU Qualified Certificates specified in other parts of ETSI EN 319 412 ([i.4] to [i.7]). It specifies common data structures that are referenced from other parts of ETSI EN 319 412 ([i.4] to [i.7]).

The profiles specified in this multi-part deliverable aim to support both the Regulation (EU) No 910/2014 [i.9] and use of certificates in a wider international context. Within the European context, it aims to support both EU Qualified Certificates and other forms of certificate.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <https://docbox.etsi.org/Reference>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

- [1] IETF RFC 3739: "Internet X.509 Public Key Infrastructure: Qualified Certificates Profile".
- [2] ISO 3166-1: "Codes for the representation of names of countries and their subdivisions--Part 1: Country code".
<https://standards.iteh.ai/catalog/standards/sist/defea33-d813-4262-9d1b-909298feb58b/sist-en-319-412-1-v1-4-4-2021>
- [3] ETSI TS 119 495: "Electronic Signatures and Infrastructures (ESI); Sector Specific Requirements; Qualified Certificate Profiles and TSP Policy Requirements under the payment services Directive (EU) 2015/2366".
- [4] ISO 17442: "Financial services - Legal Entity Identifier (LEI)".
- [5] eIDAS: "SAML Attribute Profile v1.2", 31 August 2019.

NOTE: available at <https://ec.europa.eu/cefdigital/wiki/download/attachments/82773108/eIDAS%20SAML%20Attribute%20Profile%20v1.2%20Final.pdf?version=2&modificationDate=1571068651772&api=v2>.

- [6] IETF RFC 5912: "New ASN.1 Modules for the Public Key Infrastructure Using X.509 (PKIX)".

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures.

- [i.2] ETSI EN 319 401: "Electronic Signatures and Infrastructures (ESI); General Policy Requirements for Trust Service Providers".
- [i.3] Recommendation ITU-T X.509 | ISO/IEC 9594-8: "Information technology - Open Systems Interconnection - The Directory: Public-key and attribute certificate frameworks".
- [i.4] ETSI EN 319 412-2: "Electronic Signatures and Infrastructures (ESI); Certificate Profiles; Part 2: Certificate Profile for certificates issued to natural persons".
- [i.5] ETSI EN 319 412-3: "Electronic Signatures and Infrastructures (ESI); Certificate Profiles; Part 3: Certificate Profile for certificates issued to legal persons".
- [i.6] ETSI EN 319 412-4: "Electronic Signatures and Infrastructures (ESI); Certificate Profiles; Part 4: Certificate Profile for web site certificates".
- [i.7] ETSI EN 319 412-5: "Electronic Signatures and Infrastructures (ESI) ; Certificate Profiles; Part 5: QCStatements".
- [i.8] IETF RFC 5246: "The Transport Layer Security (TLS) Protocol Version 1.2".
- [i.9] Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC.
- [i.10] Recommendation ITU-T X.520 (10/2012): "Information technology - Open Systems Interconnection - The Directory: Selected attribute types".
- [i.11] IETF RFC 5280: "Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile".
- [i.12] Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax.
- [i.13] Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC.
- [i.14] ETSI TS 119 412-1: "Electronic Signatures and Infrastructures (ESI); Certificate Profiles; Part 1: Overview and common data structures".

3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in ETSI EN 319 401 [i.2] and the following apply:

EU Qualified Certificate: qualified certificate that is stated to be in accordance with Annex I, III or IV of the Regulation (EU) No 910/2014 [i.9] or annex I of the Directive 1999/93/EC [i.1] whichever is in force at the time of issuance

short-term certificate: certificate whose validity period, i.e. the period of time from notBefore through notAfter, inclusive, is shorter than the maximum time to process a revocation request as specified in the certificate practice statement

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ASN.1	Abstract Syntax Notation 1
CA	Certification Authority
CRL	Certificate Revocation List
eIDAS	electronic IDentification, Authentication and trust Services
LEI	Legal Entity Identifier
OCSP	Online Certificate Status Protocol
OID	Object Identifier
SAML	Security Assertion Markup Language
TLS	Transport Layer Security protocol

NOTE: As specified in IETF RFC 5246 [i.8].

TSP	Trust Service Provider
UN	United Nations

4 ETSI EN 319 412 certificate profiles

4.1 General approach

All the certificate profiles specified in ETSI EN 319 412 (parts 2 [i.4], 3 [i.5], 4 [i.6], 5 [i.7] and the present document) are based upon IETF RFC 5280 [i.11] for generic profiling of Recommendation ITU-T X.509 | ISO/IEC 9594-8 [i.3]. The certificate profiles specify profiles for both EU Qualified Certificates and non-qualified certificates as relevant. Reference is made to ETSI EN 319 412-5 [i.7] for requirements relating to QCStatements.

4.2 Overview of other parts of ETSI EN 319 412

4.2.1 ETSI EN 319 412-2

Electronic Signatures and Infrastructures (ESI); Certificate Profiles; Part 2: Certificate profile for certificates issued to natural persons.

Scope: This part specifies the requirements on certificate content for TSPs issuing certificates to natural persons. It provides a certificate profile, which facilitates interoperability of certificates issued to natural persons for the purposes of supporting digital signatures, peer entity authentication, data authentication as well as data confidentiality. It specifies a profile for both EU Qualified Certificates as specified in the Regulation (EU) No 910/2014 [i.9], and non-qualified certificates. When certificates for natural persons are issued as EU Qualified Certificates, it makes reference to ETSI EN 319 412-5 [i.7] for requirements relating to QCStatements.

4.2.2 ETSI EN 319 412-3

Electronic Signatures and Infrastructures (ESI); Certificate Profiles; Part 3: Certificate profile for certificates issued to legal persons.

Scope: This part specifies the requirements on certificate content for TSPs issuing certificates to legal persons. It provides a certificate profile, which facilitates interoperability of certificates issued to legal persons for the purposes of supporting digital signatures, peer entity authentication, data authentication as well as data confidentiality. It specifies a profile for both EU Qualified Certificates and non-qualified certificates. When certificates for legal persons are issued as EU Qualified Certificates, it makes reference to ETSI EN 319 412-5 [i.7] for requirements relating to QCStatements.